JUNE 2005

Safety Smarts

City of Tempe – Environmental, Health and Safety Section

Suspicious Packages

Officer Charles Corning, Tempe Police Department

The following is a quote by one of the Unabomber's victims from 1993. Mr. Gelernter is a research technologist at Yale University who picked up an unattended plain brown cardboard box in the staff lunchroom. The box exploded severely injuring him. He was a random victim targeted merely because of his association to the school.

Gelernter: *"... You know, getting blown up is such a strange event in itself. And so, you know, one's first reaction doesn't necessarily make any sense, but I think most of us have a sense that there are some lines of work which are dangerous, in which one is in the line of fire, and being a technologist is not one of them. So it never occurred to me that I was, in what I was doing, in any way placing myself in danger of physical attack…."*

A Harvard graduate and doctor of mathematics who retreated to the life of a hermit, Theodore Kaczynski admitted to planning and carrying out explosions that killed three people and injured 23 others between 1978 and 1995. He pleaded guilty to 13 criminal counts in connection with five of the explosions, including the three fatal blasts.

Kaczynski, 55, said in journals seized from his crude cabin in Montana that he committed the bombings in the name of revenge. He targeted airline executives, computer experts, medical scientists and advertising executives, who he said represented industries and fields that help isolate people from one another and from nature, and manipulate people's minds and attitudes.

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Heat Stress

Engineer/Paramedic Gary Abe, Tempe Fire Department

The heat is on! This means that while working or playing in the outdoors, your chances of being overcome by heat illness are much greater. The likelihood is so much greater that an average of over 200 people die in the U.S. each year due to heat illness. What is heat illness? How can heat illness be avoided? What can be done for someone experiencing heat illness? Read on…

Heat Illness

Heat illness occurs when the body's core temperature rises faster than your body can dissipate heat. That's when problems begin. As body core temperature rise, so increases your heart rate, your veins and arteries dilate to dissipate more heat from the blood. Sweating occurs. Body salt and potassium are lost in the sweat.

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Inside

This is a Quarterly informational publication for City of Tempe employees. If you have comments or suggestions please contact the Environmental, Health and Safety Group.

Accident Victims Are More than Statistics

Minimizing the stress imposed during an emergency incident shouldn't be overlooked in your safety and response planning and training. By Casey Hayes

"When you have bacon and eggs for breakfast, the chicken is involved, but the pig is committed!" I don't remember where I first heard that saying, but it humorously portrays the difference between participating in an event and being an intimate part of the action. In that regard, it also applies to spill and splash accidents at industrial sites.

Plant management and safety personnel strive to minimize the occurrence of accidents, but when they do occur we want to provide the best immediate and continuing response possible.

We have a professional stake in doing the right thing, but the victim has an overwhelmingly personal stake in the outcome. Sometimes our zeal to handle the more mechanical aspects of emergency response overshadows the victim's needs and psychological state-of-mind in the moments following an accident. The people around an accident victim are involved in helping with emergency response, but the victim is really involved!

Between the trauma itself, shock, and often a sense of embarrassment that the accident even happened, a victim's state of mind during emergency response procedures usually ranges from anxious to downright terrified. Minimizing the stress imposed on a victim during an emergency incident shouldn't be overlooked in safety and response planning and training.

Planning

Proper planning to address the personal needs of accident victims begins with recognition of those needs, which are mostly common sense. If you understand the effects of trauma--the possibility of pain, nervous agitation, and accompanying shock, along with possible embarrassment--proper planning becomes a function of answering those needs and alleviating concerns to the degree possible.

Selection of the proper equipment and reasonable placement will go a long way toward easing victim concerns. Establishing the proper procedures to provide immediate first aid assistance, while also reassuring and comforting the victim, is equally critical. And, as with all areas of safety and emergency response, training on the risks and dangers present, as well as the emergency response equipment available--including locations and use instructions--is an obvious necessity. Let's consider each area.

Equipment

The need for quality emergency showers and eyewashes is obvious. Emergency equipment that doesn't work, hasn't been properly maintained, or doesn't provide the required capabilities will exacerbate the victim's anxiety. . . .with cause, perhaps.

High-quality emergency equipment in the proper numbers and locations is a good starting point. This is not a place to look to save money. Features such as high-visibility signage, easy-to-operate actuation, flow controls to assure smooth operation, and diffused spray and shower heads are good investments.

Note the aggressiveness of the flow versus the more diffused design. Imagine an injured employee stepping up to the eyewash with the aggressive flow and forcing his or her face down into it . . . it's not incredibly inviting or comforting. The products you choose can have an impact on the degree of anxiety experienced by accident victims.

Likewise, imagine an injured employee needing to disrobe under an emergency shower flow and stand there for the required 15-minute use cycle. While it has to be done and few would hesitate, consider the state of mind of that employee a few minutes into the cycle.

Selection of the proper equipment and reasonable placement will go a long way toward easing victim concerns.

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Hazardous Epidemic

New Georgia Tech Training Program Helps Public Safety Personnel Protect Themselves from Meth. Labs

An epidemic of small-scale methamphetamine labs is creating a new hazard for public safety personnel who may be injured by the flammable solvents, toxic acids and other hazardous materials used to produce the illicit drug in homes, apartments, hotel rooms -- and even vehicles.

Contamination from these makeshift labs is also creating hazardous waste problems in rural communities that are often ill-prepared to deal with them. But perhaps the most environmentally worrisome aspect of the labs is the hidden hazard they may create for the unsuspecting new occupants of homes, apartments and hotel rooms inadequately cleaned up after being used for methamphetamine production.

To help law enforcement personnel, emergency medical technicians, firefighters and others deal with the threat from these clandestine drug laboratories, the Georgia Tech Research Institute (http://www.gtri.gatech.edu/) has developed a new training initiative that will teach these "first responders" how to recognize the labs and protect themselves from the contents. The program, which includes training at a simulated methamphetamine lab, will also provide information about proper cleanup techniques.

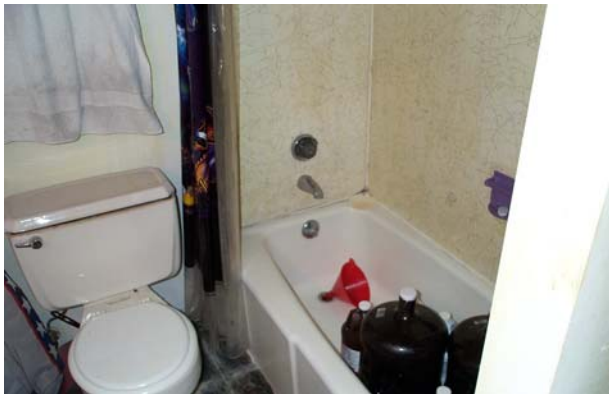
"There is a lot of potential for harmful exposure for first-responders who may not be aware that they are going into a methamphetamine lab and may not know how to protect themselves from the hazardous materials that are there," said Ray Doyle, senior research scientist in GTRI's Electro-optics, Environment and Materials Laboratory. "An estimated 30 percent of the fires that departments are responding to are the result of methamphetamine labs. But firefighters may not know until they get into a building that there is a lab there."

Techniques for producing the highly-addictive drug vary, but can include the use of such materials as lye (sodium hydroxide), red phosphorus, lithium metal, benzene, toluene, ether and ammonia. The danger is compounded when the materials are "cooked" over an open flame, creating both fire and explosion hazards.

In December 2004, four people were killed in Texas when a methamphetamine lab exploded. Estimates suggest that as many as 100 public safety officers have been injured while seizing meth labs over the past several years.

"Meth labs use a wide range of chemicals that can expose not only the people producing the drug, but also others in the home -- including children," noted Kevin Caravati, a GTRI senior research scientist. "A lot of these chemicals are toxic, and the hazardous waste they leave behind is often just poured out onto the ground or dumped on unsuspecting businesses."

Beyond the chemical hazards, the meth labs are sometimes booby-trapped to injure law enforcement personnel. "The dangers that first-responders face from methamphetamine labs can be much greater than those at environmental hazard sites associated with traditional industrial sources, but the formal training programs are just not available at the right level yet" Caravati added.



Once identified, cleaning up a meth lab can be done with established techniques using standard precautions -- including protective clothing. "But the process of heating the chemicals tends to spread the contamination over a wide area beyond the immediate production facility," Doyle noted.

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Suspicious Packages *Continued*

On February 26, 2004 Don Logan, the Scottsdale Director of Diversity received and opened a parcel that turned out to be a bomb. Three persons were injured. There was nothing in Mr. Logan's personal or professional life to suggest he was a likely target of a bombing.

The above two examples illustrate that no matter how you live your life, there is always a chance that you could be the unfortunate victim, intended or unintended, of a bombing. Although statistically the odds are very great against this happening to you, this article is presented to better inform you of how to react to suspicious items and parcels. First some definitions:

Suspicious/Unattended Package

An item that either is suspicious by appearance or by the pure fact that it is left in a location unattended. For example, a briefcase left in a restroom stall or a galvanized steel pipe with two end caps lying on the ground.

Suspicious Mail/Parcels

Mail received that has one or more characteristics identifying it as suspect. For example, an envelope that has oily stains, has personal or restrictive markings, and no return mailing address. These are just some of the indicators to be aware of in identifying suspicious mail. See the US Postal Service poster for additional indicators.

What to do if Presented with a Suspicious/Unattended Package

1. **DO NOT TOUCH THE ITEM OR ATTEMPT TO OPEN IT!**
2. Notify supervisor of the item and attempt to identify an owner.
3. If no owner can be located, treat the item with respect by leaving the area and preventing further persons from entering.
4. Notify the Tempe Police Department, **911**.

What to do if Presented with Suspicious Mail/Parcel

1. Handle with care. **DO NOT OPEN, SHAKE OR BUMP THE PACKAGE!**
2. Isolate the mail immediately and contact the Tempe Police Department, **911**.

For more information you can view a nine minute video titled "Mail Bombs: Characteristics and Security" available for viewing to all city employees on the city intranet by logging on to:

http://www1.tempe.gov/police/videos/mailbomb.htm

Hazardous Epidemic *Continued*

That contamination can leave a hidden hazard for unsuspecting residents of homes, apartment or hotel rooms that have been inadequately cleaned up. Methamphetamine is readily taken up by carpeting, draperies and other furnishings, so new tenants can be exposed to residual amounts of the drug through simple skin contact.

"Unless the home is properly decontaminated, the next family moving in will be contaminated," Doyle said. "Children can wind up with measurable levels of methamphetamine just from crawling on the floor."

Proper decontamination can be expensive, up to $10,000 for a large home. "One of the most difficult issues for the future will be determining who will pay for the cleanup," Caravati noted. "The people who have created the problem are usually in jail and don't have any assets left to pay for the work."

The new methamphetamine training initiative adds to GTRI's programs in hazardous waste identification and remediation.

"This is a natural fit for us because of our experience with hazardous materials and emergency response," noted Ken Johnson, interim EOEML director. "There is a huge public education effort that needs to be done, and thousands of people need training in this area. We want to help these first-responders know how to protect themselves and others."

The new training effort has already attracted participation from public safety officials in Georgia and Tennessee, as well as the U.S. Drug Enforcement Agency, which has been consulting with the GTRI scientists in development of the training program.

Beyond the training, the researchers are developing tools that will help first-responders more quickly identify the drug. Long term, they hope to develop improved communications and decision-aid systems for public safety personnel, and study how methamphetamine exposure affects human health and the environment.

In 2003, more than 400 methamphetamine labs were shut down in Georgia, and that number is expected to grow as law enforcement agencies focus more attention on the problem, Doyle noted.

The environmental and safety concerns stem from makeshift labs producing small amounts of the drug, usually for personal use or limited distribution. "Most people are probably unaware of the how serious the meth issue is and the problems it poses for the public safety community," Caravati added.

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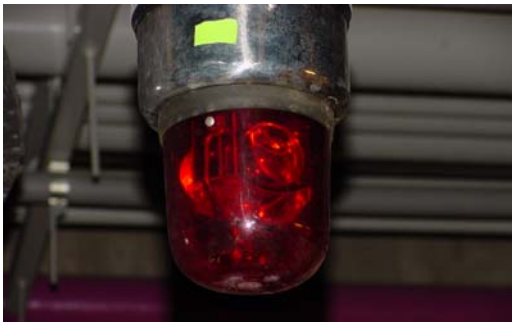
If you discover materials that you suspect might be from the manufacturing of methamphetamine, DO NOT touch or move anything. If it poses an immediate risk to the public, employees or the environment contact the Tempe Police or Fire Department 911.

Additional information contact TPD Sgt. Greg Brown (480) 350-8730

For illegally disposed of chemicals, contact EHS (480) 350-2818 or (602) 201-1857.

Accident Victims *Continued*



Remember, the victim is probably embarrassed that the accident occurred anyway. Now, add the embarrassment of an exposed shower. A number of products on the market address the privacy needs of victims using the emergency equipment.

The ultimate visibility and privacy is afforded by enclosed products. These emergency shower and eyewash booths offer superior visibility to accident victims en route to first response equipment, as well as privacy during use. In larger sizes, they can provide space inside for safety personnel to assist the victim during use.

Beyond providing operable and tested emergency equipment with features that offer as much comfort and privacy as possible, it is imperative that your emergency response program encourage full-cycle use. ANSI Z358.1-2004 stipulates that emergency showers and eyewashes should be used for a full 15-minute drench or irrigation cycle in all instances. This is to assure that all hazardous materials have been adequately flushed from the body, mitigating potential further injury.

In many geographic areas, municipally supplied water can become cold enough to make a 15-minute use cycle a torture test, let alone a comforting experience. Likewise, there are geographic areas and hot ambient temperature industrial processes that can heat municipal water to dangerously warm levels, again possibly resulting in a shortened use cycle. It is imperative that emergency response assets reconcile these situations with either tempering or reverse tempering to ensure the water used is within a safe and comfortable range. Per the ANSI Z358.1 standard, the range should be between 60° F and up to below 100° F for both emergency showers and eyewashes.

Procedures

Once your equipment is what and where it should be, your attention should next focus on (1) the procedures used to maintain emergency assets and (2) the procedures for using the equipment in the event of an accident.

ANSI requires that all emergency showers and eyewashes should be physically tested every week. This not only assures proper operation, but also flushes out debris in the system. Keep in mind that emergency equipment fed by municipal water is generally protected by residual levels of chlorine in the water in the supply lines and equipment. However, that residual chlorine will dissipate in fairly short order when standing dormant, leaving the water susceptible to growth of organic pathogens such as viruses and bacteria. Obviously, these are not things with which you want your employees flushing their eyes or other injured body tissue. Once-a-week actuation goes a long way toward ensuring the level of residual protection in the system.

It's important that your operating procedures also include the specific responsibilities of all of the people involved in emergency response, including otherwise uninvolved employees who could be potential victims. Written procedures ensure everyone knows his or her role and also provide valuable documentation in the event of a serious accident.

Training

Once the equipment and safety/emergency procedures are in place, it's time to make sure response is second nature to everyone. Training on the locations of your emergency equipment and how to operate it rounds out your preparation and response plan.

You can't over-train personnel on using emergency equipment. "War gaming" is a popular way of assuring a second nature response to real emergencies. The old grammar school "fire drill" approach will give you a realistic look at what you can expect if and when the real thing occurs.

There are geographic areas and hot ambient temperature industrial processes that can heat municipal water to dangerously warm levels, again resulting in a shortened use cycle

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Heat Stress *Continued*

The body's protective or compensatory mechanisms are functioning properly to aid in cooling the body. These compensatory mechanisms work properly throughout two of three stages of heat illness. The final stage, heat stroke, occurs when the body can no longer compensate properly, sweating ceases, core temperature spikes and blood pressure drops substantially.

Heat Cramps

The first stage of heat illness is heat cramps. This is often experienced after exertion and during relaxation. Muscle cramps occur because of dehydration and overexertion.

Profuse sweating causes your body to dehydrate and lose salt and other electrolytes. Electrolytes are necessary for proper muscle function. This can be treated by drinking fluids with electrolytes, as many sport drinks contain. Massaging cramping muscles often reduces this symptom.

Heat Exhaustion

During this second stage of heat illness, compensatory mechanisms are still helping to dissipate body heat. Symptoms may include nausea, vomiting, dizziness, fatigue, a pounding headache and hyperirritability. Fluid intake and resting while lying down are often all that is needed to resolve these symptoms.

Heat Stroke

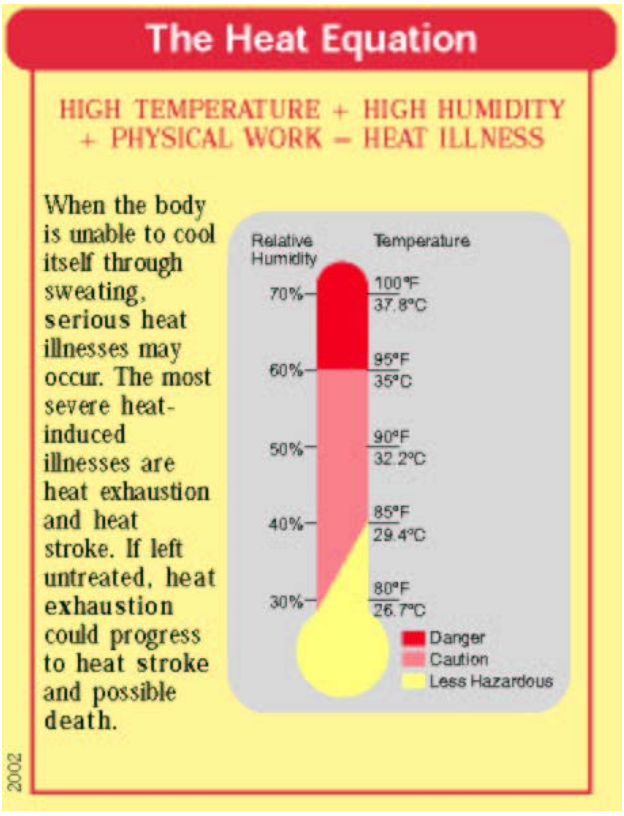
THIS IS A TRUE MEDICAL EMERGENCY. Brain, liver and kidney damage may occur. In this final stage of heat illness the body is no longer regulating core temperature properly. Death will occur if not resolved! When core temperature spikes, the brain does not function adequately. At this point, protective mechanisms have failed and so does the brain. The patient may exhibit significant nervous system dysfunction displayed by seizures, coma, bizarre behavior, hallucinations and delirium. Other symptoms of heat stroke may include those of heat cramps and heat exhaustion

Avoiding Heat Illness

There are several things which may be done to avoid heat illness:

- Use common sense.
- Drink plenty of fluid before and during exertion in hot and humid weather. Water is usually best to drink for hydration. If exerting for more than an hour, rehydrate with an electrolyte drink in addition to water. If you are thirsty, you are already behind the eight ball. You are already becoming dehydrated.
- Limit caffeine, tea, alcohol and other diuretic intake.
- Limit exposure to heat.
- If heat illness symptoms arise, get out of the hot environment.
- Wear light colored, breathable fabric clothing.
- Know that some people have a greater susceptibility to heat illness. They include: the very young, the very aged, people who have not acclimatized to heat, diuretic intake; patients using psychotropics, antihistamines, beta-blockers, antipsychotics, and phenothiazine medications.

Above all, work hard, play hard and prepare yourself for success in the summer heat!



Accident Victims *Continued*

In the end, having the proper equipment with the proper accessories in the right locations and having people who are well trained and capable of operating with confidence and compassion in an emergency are the best ways to ensure you are prepared for any eventuality. Anything less doesn't do justice to your most valuable asset: your people.

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Stevens Publishing Corporation

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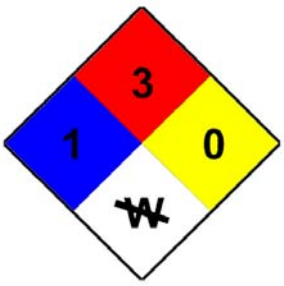
Safety Programs – Training

The following safety programs are administered through the EHS Group:

- Air Monitoring
- Asbestos
- Confined Space
- Hazard Communication
- Hazardous Waste
- Hearing Conservation
- Indoor Air Quality
- Illegal Chemical Disposal
- Mold
- Respiratory Protection
- Tuberculosis (TB)

Please contact us if you have any questions about any of these programs.



The following training classes are scheduled

OSHA 10-Hour General Industry – June 23, 2005

Confined Space Operations – August 25, 2005

All classes are listed on the ThinQ Server. If you wish to have site or group specific training please contact EHS.

Need to get in touch with us…

The ***Environmental, Health and Safety Section*** are here to assist you in all your safety and hazardous materials needs.

David Tavares	Hazmat Supervisor	david_tavares@tempe.gov	350-2819
Scott Mosley	Industrial Hygienist	scott_mosley@tempe.gov	350-8877
John Higuera	Safety and Training Coordinator	john_higuera@tempe.gov	350-2640
Raymond Hagen	Hazmat/Safety Specialist	raymond_hagen@tempe.gov	350-2818

Visit our intranet site

http://www1.tempe.gov/hpcc